



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/605,917	06/28/2000	James A. Aviani JR.	CISCP174/3082	6094

22434 7590 08/13/2003
BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER

MAURO JR, THOMAS J

ART UNIT	PAPER NUMBER
----------	--------------

2143

DATE MAILED: 08/13/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/605,917	AVIANI ET AL.
	Examiner Thomas J. Mauro Jr.	Art Unit 2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____ .
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-25 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 June 2000 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____ .
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ . | 6) <input type="checkbox"/> Other: _____ |

1. Claims 1-25 have been examined.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,182,139 to Brendel in view of U.S. Patent No. 6,247,054 to Malkin and further in view of pending application 09/128,896 to Koehler et al.

4. Regarding claim 1, Brendel teaches the method comprising: receiving a packet from a client, the packet having a destination identifier associated with a server (Figure 8 and Col. 11 lines 20-21); storing the destination identifier of the start packet (Figure 8 and Col. 11 lines 21-22); after storing the destination identifier of the start packet and tagging the start packet, sending the start packet to the server (Figure 8 and Col. 11 lines 28-29); when a first acknowledgement packet associated with the start packet is received, storing and associating a source identifier of the first acknowledgement packet with the stored destination identifier of the start packet (Figure 8, Col. 11 lines 20-21 and lines 57-61 – In order for the packets to go to the replica server when the destination address is that of the original server, an association of addresses in the address translation look-up table would be necessary to correlate the original servers address with that of the appropriate replica); and after storing and associating the

source identifier of the first acknowledgement packet, sending the first acknowledgement packet to the client (Figure 8 – SYN + ACK(0) back to client). Brendel, however, does not teach adding a tag to the start packet to indicate that the start packet should be forwarded to any replica that duplicates the data content of the server. Koehler et al., however, teaches of using a tag within a packet consisting of a certain value to identify a certain property (Page 4 paragraphs [0033-0034]). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the packet disclosed in the invention to Brendel to allow a tag bit to be set within the data packet indicating whether or not the packet could be forwarded to replica servers if they existed in order to make sure content is received from the proper server and not redirected to a replica in certain cases to protect the validity of the data. In addition, Brendel does not teach cracking the first acknowledgement packet to obtain the source identifier when the first acknowledgement packet has been encapsulated and when cracked, encapsulating the cracked acknowledgement packet with a source address associated with the packet and sending it to the client. Malkin, however, teaches of encapsulating packets in order to preserve the destination address of the original packet before being redirected (Col. 3 lines 34-38). Later, the server must decapsulate i.e. crack (Col. 4 lines 44-46) the encapsulated packet to gain access to its data. In view of the teachings by Malkin, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to encapsulate the packet disclosed in Brendel to provide a means for preserving the original information i.e.

address contained within the contents of the packet, and to also provide a method for decapsulating, i.e. cracking, the encapsulated packet.

5. Regarding claim 2, Brendel teaches the invention substantially as claimed, the method further comprising: when a subsequent packet associated with the start packet is received that is not a start packet or an acknowledgement packet, replacing destination identifier of the subsequent packet with a destination identifier equal to the source identifier of the acknowledgement packet prior to being cracked or encapsulating the subsequent packet with a destination identifier equal to the source identifier of the acknowledgement packet prior to being cracked when the subsequent packet originates from the client (Col. 11 lines 48-50); and forwarding the subsequent packet to its destination (Col. 11 lines 50-51).

6. Regarding claim 3, Brendel teaches the invention substantially as claimed, wherein the subsequent packet is only modified when the destination identifier of the packet does not equal the destination identifier of the start packet (Col. 7 lines 29-35 – If the destination address of the start packet (SYN) is returned with the SYN+ACK packet, it allows the transfer session to proceed normally with no intervention).

7. Regarding claim 4, Brendel teaches the invention substantially as claimed, wherein the start packet is only tagged when the start packet is associated with web

data (Col. 15 lines 54-55 – In the present embodiment of his invention, only web data, when a URL is entered in the client's browser, will be sent to the client-side dispatcher), and the method further comprising sending the start packet to the server without the tag when the start packet is not associated with web data (Col. 16 lines 15-18 – In the present embodiment of his invention, non web data, called "other Internet traffic", is not handled by the client-side dispatcher and is just passed to its appropriate destination).

8. Regarding claim 5, Brendel does not explicitly teach the invention as claimed. It would have been obvious to one of ordinary skill in the art at the time the invention was made that one can quickly and easily discern web data from other Internet traffic by the destination port number i.e. 80. Because this is widely known in the networking art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a check for web data by destination port number into the invention of Brendel in order to quickly and easily obtain the type of data from the packet, already at hand, rather than using other methods which carry excess overhead.

9. Regarding claim 6, Brendel teaches the invention substantially as claimed as aforementioned in the rejection to claim 1, with the addition of, the computer system comprising: a memory; and a processor coupled to the memory, wherein at least one of the memory and the processor are adapted to provide: receiving a packet from a client, the packet having a destination identifier associated with a server (Claim 13 Col. 18 lines 52-67 – It is obvious to one of ordinary skill in the art of computers that all

computers consist of one or more processors, memory, and various other components. Therefore, by teaching a computer system, it is obvious that a memory and a processor coupled to the memory are taught by the invention to Brendel). The other limitations recited in claim 6 are rejected under the same rationale as the limitations in claim 1.

10. Regarding claim 7, Brendel teaches the invention substantially as claimed, a computer system (Col. 18 lines 52-67) wherein at least one of the memory and the processor are further adapted to provide: when a subsequent packet associated with the start packet is received that is not a start packet or an acknowledgement packet, replacing destination identifier of the subsequent packet with a destination identifier equal to the source identifier of the acknowledgement packet prior to being cracked or encapsulating the subsequent packet with a destination identifier equal to the source identifier of the acknowledgement packet prior to being cracked when the subsequent packet originates from the client (Col. 11 lines 48-50); and forwarding the subsequent packet to its destination (Col. 11 lines 50-51).

11. Regarding claim 8, Brendel teaches the invention substantially as claimed, including all of the aforementioned limitations of claim 6, wherein the subsequent packet is only modified when the destination identifier of the packet does not equal the destination identifier of the start packet (Col. 7 lines 29-35 – If the destination address of the start packet (SYN) is returned with the SYN+ACK packet, it allows the transfer

session to proceed normally with no intervention).

12. Regarding claim 9, Brendel teaches the invention substantially as claimed, including all of the aforementioned limitations of claim 6, wherein the start packet is only tagged when the start packet is associated with web data (Col. 15 lines 54-55 – In the present embodiment of his invention, only web data, when a URL is entered in the client's browser, will be sent to the client-side dispatcher), and the method further comprising sending the start packet to the server without the tag when the start packet is not associated with web data (Col. 16 lines 15-18 – In the present embodiment of his invention, non web data, called “other Internet traffic”, is not handled by the client-side dispatcher and is just passed to its appropriate destination).

13. Regarding claim 10, Brendel does not explicitly teach the invention as claimed. It would have been obvious to one of ordinary skill in the art at the time the invention was made that one can quickly and easily discern web data from other Internet traffic by the destination port number i.e. 80. Because this is widely known in the networking art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a check for web data by destination port number into the invention of Brendel in order to quickly and easily obtain the type of data from the packet, already at hand, rather than using other methods which carry excess overhead.

14. Regarding claim 11, Brendel teaches the invention substantially as claimed as aforementioned in the rejection to claim 1, with the addition of, the computer program product comprising: at least one computer readable medium; computer program instructions stored within at least one computer readable product configured to cause a processing device to: receiving a packet from a client, the packet having a destination identifier associated with a server (Claim 16 Col. 19 lines 33-52). The other limitations recited in claim 11 are rejected under the same rationale as the limitations in claim 1.

15. Regarding claim 12, Brendel teaches the method comprising: receiving a packet that is traveling between a client and a server or between the client and a replica (Figure 8 and Col. 11 lines 20-21); when the received packet is an acknowledgement packet that is received first and spoofs the server (Col. 11 lines 44-45 – Spoofing occurs when the dispatcher swaps the source identifier of the replica server with the original server's source address), obtaining a source identifier of the replica from the acknowledgement when the acknowledgement originates from the replica (Col. 11 lines 40-45 – Before the dispatcher changes the source address to the original server's source address upon receiving the SYN + ACK packet, the dispatcher must read the SYN + ACK packet to find out the source identifier of the server that responded in the timeliest manner); and when the received packet is a subsequent packet received after the start packet and the acknowledgement packet, altering the subsequent packet so that it goes to the replica when the subsequent packet originates from the client, wherein the alteration is based on the obtained source identifier from the

acknowledgement packet (Col. 11 lines 44-50).

Brendel, however, does not teach altering the start packet to indicate that it should be forwarded to any replica with duplicated data content. Koehler et al., however, teaches of using a tag within a packet consisting of a certain value to identify a certain property (Page 4 paragraphs [0033-0034]). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the packet disclosed in the invention to Brendel to allow a tag bit to be set within the data packet indicating whether or not the packet could be forwarded to replica servers if they existed in order to make sure content is received from the proper server and not redirected to a replica in certain cases to protect the validity of the data.

16. Regarding claims 13 and 19, Brendel discloses all of the limitations as set forth in claims 12 and 18. He also discloses wherein the source identifier of the replica is obtained from the acknowledgement packet by cracking the acknowledgement packet when it is encapsulated (Col. 11 lines 40-45 – Before the dispatcher changes the source address to the original server’s source address upon receiving the SYN + ACK packet, the dispatcher must first crack the encapsulated packet, if necessary, and read the SYN + ACK packet to find out the source identifier of the server that responded in the timeliest manner).

17. Regarding claim 14 and 20, Brendel does not explicitly teach the invention as claimed. Brendel discloses all of the limitations as set forth in claims 12 and 18.

However, as was shown in the rejection to claim 1, Malkin teaches a method for both encapsulating and decapsulating i.e. cracking a packet, which would be obvious to implement in the method invention of Brendel. Thus, these claim is rejected based upon the same rationale as described in claim 1.

18. Regarding claims 15 and 21, Brendel does not explicitly teach the invention as claimed. Brendel discloses all of the limitations as set forth in claims 12 and 18. However, as was shown in the rejection to claim 1, Koehler et al. teaches a method for allowing tags to be set inside a packet, which allow for certain actions to be taken if certain bits are set. It would have been obvious to add a tag to the SYN packet, i.e. start packet, of Brendel, in order to provide forwarding control of data packets to replica servers. Thus, this claim is rejected based upon the same rationale as described in claim 1.

19. Regarding claims 16 and 22, Brendel discloses all of the limitations as set forth in claims 12 and 18, wherein the subsequent packet is altered by replacing the subsequent packet's destination identifier with a destination identifier of the start packet (Col. 11 lines 48-50).

20. Regarding claims 17 and 23, Brendel does not explicitly teach the invention as claimed. Brendel discloses all of the limitations as set forth in claims 12 and 18. However, as was shown in the rejection to claim 1, Malkin teaches a method for

encapsulating the information, i.e. destination identifier (address). It would have been obvious to use this method of encapsulating the information contained in the packet of Brendel, in order to protect and keep intact the information being sent.

21. Regarding claim 18, Brendel teaches the invention substantially as claimed as aforementioned in the rejection to claim 12, with the addition of, the computer system comprising: a memory; and a processor coupled to the memory, wherein at least one of the memory and the processor are adapted to provide: receiving a packet from a client, the packet having a destination identifier associated with a server (Claim 13 Col. 18 lines 52-67 – It is obvious to one of ordinary skill in the art of computers that all computers consist of one or more processors, memory, and various other components. Therefore, by teaching a computer system, it is obvious that a memory and a processor coupled to the memory are taught by the invention to Brendel). The examiner uses the same rationale used in the rejection to claim 12 to reject the other limitations recited in claim 18.

22. Regarding claim 24, Brendel teaches the invention substantially as claimed as aforementioned in the rejection to claim 12, with the addition of, the computer program product comprising: at least one computer readable medium; computer program instructions stored within at least one computer readable product configured to cause a processing device to: receiving a packet from a client, the packet having a destination identifier associated with a server (Claim 16 Col. 19 lines 33-52). The other limitations

recited in claim 24 are rejected under the same rationale as the limitations in claim 12.

23. Regarding claim 25, Brendel teaches the invention substantially as claimed, the apparatus comprising:

- a. Means for receiving a packet that is traveling between a client and a server or between the client and a replica (Figure 8 and Col. 11 lines 20-21);
- b. Means for obtaining a source identifier of the replica from the acknowledgement when the acknowledgement originates from the replica when the received packet is an acknowledgement packet that is received first and spoofs the server (Col. 11 lines 44-45 and Col. 11 lines 40-45 – Before the dispatcher changes the source address to the original server's source address upon receiving the SYN + ACK packet, the dispatcher must read the SYN + ACK packet to find out the source identifier of the server that responded in the timeliest manner); and
- c. Means for altering the subsequent packet so that it goes to the replica when the subsequent packet originates from the client when the received packet is a subsequent packet received after the start packet and the acknowledgement packet, wherein the alteration is based on the obtained source identifier from the acknowledgement packet (Col. 11 lines 48-52).

Brendel, however, fails to teach the means for altering the start packet to indicate that the start packet should be forwarded to any replica that duplicates the data content of the server when the received packet is a start packet that is traveling

from the client to the server. However, as was shown in the rejection to claim 1, Koehler et al. teaches altering a packet, which allow for certain actions to be taken if certain bits are set. It would have been obvious to alter the SYN packet, i.e. start packet, of Brendel in order to provide forwarding control of data packets to replica servers. Thus, this limitation of claim 25 is rejected based upon the same rationale as described in claim 1.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,415,323 to McCanne et al. teaches the redirection of data packets over a network based upon proximity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Mauro Jr. whose telephone number is 703-605-1234. The examiner can normally be reached on M-F 8:00a.m. - 4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 703-308-5221. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 7037467238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Application/Control Number: 09/605,917
Art Unit: 2143

Page 14

Thomas J. Mauro Jr.
Examiner
Art Unit 2143

TJM
August 1, 2003



DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100